

Patent Abstracts of Japan

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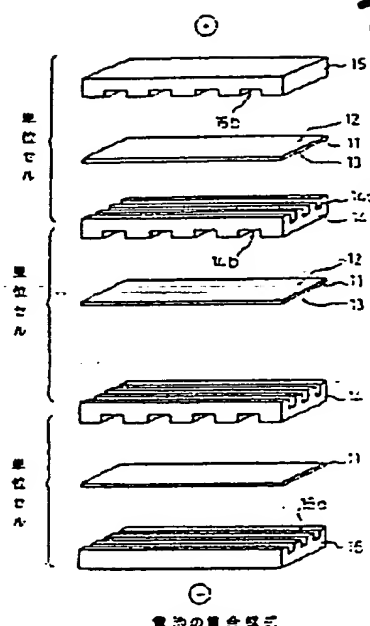
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TITLE : HIGH-TEMPERATURE TYPE FUEL CELL



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ABSTRACT : PURPOSE: To improve the battery output by forming a cathode with a specific composition, and providing platinum on the surface of an electrolyte faced to the cathode, the surface of the cathode faced to a current collector and/or the surface of the current collector faced to the cathode.

CONSTITUTION: A zirconia plate added with yttrium is used for a solid electrolyte plate 11, $\text{La}_{0.9}\text{Sr}_{0.1}\text{MnO}_3$ powder is dispersed in an organic binder and coated on the oxygen passage side to form a cathode 12, and Ni/ZrO_2 thermite mixed powder is dispersed in the organic binder and coated on the hydrogen passage side to form an anode 13. Current collectors 14-16 have grooves 14a, 14b, 15b, 16a for gas passages on flat plates made of a Co alloy, and a platinum film is spattered on the contact face with the cathode 13. The plate 11 and the current collectors 14-16 are laminated and sealed with gas, then a cylindrical alumina manifold is fitted and sealed with gas and heated. Nitrogen gas is fed to the hydrogen passage side at 300°C or above for preventing the oxidation of the anode 13, the temperature is increased to 1000°C, then hydrogen is fed to the anode 13 side, oxygen is fed to the cathode 12 side, and power is generated. The internal contact resistance is reduced, and the battery output can be improved.

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